

10/021,951

IN THE SPECIFICATION

Please amend the specification in the application as filed as follows:

Delete the first two paragraphs on page 2 of the application as filed as shown below.

~~In a method of the generic type, the object set is achieved, according to the invention, by the characterizing features of Patent Claim 1.~~

~~With regard to a device of the generic type, according to the invention the object is achieved by the characterizing features of Patent Claim 10.~~

Amend each of the paragraphs identified below as shown below its associated identification:

a. The paragraph that starts at line 24 on page 5:

Figure 1 illustrates the basic idea which is implemented in both methods or method device configurations. To monitor leaks or to detect leaks on seals and packing which are used to seal the housing leadthrough 2 of the valve rod 1 on engineering valves, in addition to the first seal 10 a second seal 20 of identical or different form, known as the "control seal" is used. This second seal 20 is also used to seal the valve rod 1 and is arranged in series with the first seal 10, on its side which is remote from the system pressure.

b. The paragraph that starts at line 34 on page 5:

The two seals 10 and 20 enclose a volume, which is known as the control volume 30. Depending on the design of the process valve, this control volume is constant or can vary within set limits. It is assumed that the seal 10 which is to be monitored wears as quickly as or more quickly than the control seal 20. In the event of a leak occurring at the seal 10 which is to be monitored or at both seals 10,20, the pressure rises in the control volume 30. The use of pressure sensors or pressure switches allows the pressure rise to be recorded and interpreted by means of an intelligence unit (e.g. position regulator with corresponding control program).

c. The paragraph that starts at line 10 on page 6:

Depending on the permissible leak rate, a distinction is drawn between two modes of operation, the first of which is shown in Figure 2. If a certain leak rate - even if only a small leak rate - is permitted, the control volume 30 can be emptied continuously. For continuous emptying, the control volume is opened to the environment or into a collection vessel via a technical flow resistance which has to be calibrated once (e.g. a restrictor, gap or diaphragm). A filter may, as is shown in Fig. 2, be provided upstream of the resistance, in order to prevent it from becoming blocked by particles or other solids entrained in the medium.

d. The paragraph that starts at line 22 on page 6:

The worn seals also represent a resistance in terms of flow. The pressure drop across the seals which are to be monitored leads to a leak flow, which is to be detected. The leak flow into the control volume 30 in turn leads to a pressure rise in this volume. The pressure rise leads to leak flows also being established both across the second seal and across the ~~additional~~ technical flow resistance. By correct matching or setting of the technical flow resistance, it is possible for by far the majority of the flow to be guided over this technical resistance. Depending on its flow characteristics and the properties of the medium used, a pressure which is greater than the ambient pressure and lower than the system pressure is established in the control volume 30. The occurrence of this very pressure is detected by means of sensors P1 and P2 and is a necessary index of a leak flow rate which has been selected in advance by adjustment of the technical flow resistance.

e. The paragraph that starts at line 4 on page 7:

By matching a pressure level and the technical flow resistance, it is possible to establish a leak rate which lies between the "good state" and the unacceptable "defective state". Furthermore, by using two or more pressure switches P_n or one pressure sensor, it is possible to differentiate between

different strengths of leak.

f. The paragraph that starts at line 10 on page 7:

A filter may be provided upstream of the outlet restrictor, in order to prevent contamination, for example from the medium or as a result of abrasion, which could lead to the technical flow resistance becoming blocked. If appropriate, the state of the filter can also be monitored by means of a differential pressure switch.

g. The paragraph that starts at line 16 on page 7:

Figure 3 shows a different mode of operation, specifically that which involves monitoring with the control volume 30 being opened from time to time or at intervals, i.e. discontinuously. If permanent leak rates are not acceptable, the control volume 30 is, if necessary, emptied only under orders of the operating staff, via, as is shown in Fig. 3, a pressure-relief valve PV1.

h. The paragraph that starts at line 35 on page 7:

The switching points are recorded using two pressure switches or a pressure sensor and are transmitted to a position regulator 41.

i. The paragraph that starts at line 1 on page 8:

An evaluation unit 40, which interprets the signals from the pressure switches or the pressure sensor, may, as is shown in Fig. 3, be integrated in the position regulator 41. A leak flow rate is determined as a function of the closing time, the control volume, the pressure in the control volume and the state equations of the working medium.

j. The paragraph that starts at line 8 on page 8:

The leak flow rate determined is compared with a permissible leak flow rate. If ~~an admissible~~ the permissible leak flow rate is exceeded, an alarm is generated by the evaluation unit 40 and is transmitted to a higher-level monitoring unit (e.g. a control system which is not shown in Fig. 3). The alarm which occurs may also be indicated directly on the outside of the position regulator 41.

k. The paragraph that starts at line 16 on page 8:

For this variant which is shown in Fig. 4, a 2/2-way switching valve V1 of the "normally closed" type with an outlet to the environment or into a collection vessel is provided on the control volume. The switching valve V1 is to be designed as a seat valve providing a sufficient seal.

1. The paragraph that starts at line 21 on page 8:

The switching valve V1 can be actuated in three different ways:

1. By means of a pressure switch with sufficient and known hysteresis or a two-position switch as is shown in Fig. 4.
2. By means of two pressure switches, which are each set to a known opening and closing pressure.
3. By means of a pressure switch with downstream timer (switch-off delay).

m. The paragraph that starts at line 30 on page 8:

As shown in Figure 4, it is additionally possible to use a pressure sensor which transmits the pressure signal to the position regulator 41.

n. The paragraph that starts at line 33 on page 8:

In the position regulator 41 there is an evaluation unit 40 which interprets the signals from the pressure switch and/or the pressure sensor. A leak flow rate is determined as a function of the closing time, the control volume, the pressure in the control volume and the state equations of the working medium. The leak flow rate determined is compared with an admissible leak flow rate. If an admissible leak flow rate is exceeded, the evaluation unit 40 generates an alarm and transmits it to a higher-level monitoring unit (e.g. a control system which is not shown in Fig. 4). The alarm which is generated can also be displayed directly on the outside of the position regulator 41.

10/021,951

IN THE DRAWING

-- Please amend Figs. 2-5 of the drawing as originally filed, each
-- of which were on an individual sheet, as shown on the attached
sheets for those figures.